

WHAT IS CLAIMED IS:

1. A method for driving an image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels, said method controlling a voltage applied to the pixel electrodes in a conduction period of the pixel switching elements according to a pulse width supplied to the signal lines,

wherein the voltage applied to the pixel electrodes is less than a voltage supplied to the signal lines.

2. The method as set forth in claim 1, wherein a proportion of a maximum value of the voltage applied to the pixel electrodes with respect to the voltage supplied to the signal lines becomes different depending on a polarity of the voltage applied to the pixel electrodes.

3. The method as set forth in claim 1, wherein the pulse width of a supplied voltage to the signal lines

in the conduction period of the pixel switching elements becomes different depending on a polarity of the voltage applied to the pixel electrodes, even when displaying the same tone.

4. The method as set forth in claim 1, wherein an allocated time for a single scanning line is different for each polarity of the voltage applied to the pixel electrodes.

5. The method as set forth in claim 1, wherein, with respect to an image display device having the common electrode for applying a common potential to the pixels and having a plurality of scanning lines for driving the pixel switching elements, liquid crystal is displaced according to a potential difference between the common electrode and the pixel electrodes so as to carry out display, and an amplitude of a voltage supplied to the signal lines is equal to an amplitude of a voltage supplied to the common electrode.

6. The method as set forth in claim 1, wherein a maximum value of an amplitude of the voltage applied to the pixel electrodes is in a range of not less than 80 percent and not more than 98 percent of an amplitude of

a voltage supplied to the signal lines.

7. A method for driving an image display device, said method applying a voltage between a potential of signal lines and a potential of a common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein tones are displayed by shifting phases of waveforms of the signal lines and the scanning lines, and polarities of pixels in a signal line direction are inverted alternately.

8. A method for driving an image display device, said method applying a voltage between a potential of signal lines and a potential of a common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein tones are displayed by shifting phases of waveforms of the signal lines and the common electrode, and polarities of pixels in a signal line direction are inverted alternately.

9. The method as set forth in claim 8, wherein the

waveform of the common electrode is off-phase by a certain degree with respect to the waveform of the scanning lines.

10. The method as set forth in claim 7, wherein a potential difference between the potential of the signal lines and the potential of the common electrode is maximum at an end of one horizontal period.

11. The method as set forth in claim 8, wherein a potential difference between the potential of the signal lines and the potential of the common electrode is maximum at an end of one horizontal period.

12. The method as set forth in claim 7, wherein a potential difference between the potential of the signal lines and the potential of the common electrode is minimum at an end of one horizontal period.

13. The method as set forth in claim 8, wherein a potential difference between the potential of the signal lines and the potential of the common electrode is minimum at an end of one horizontal period.

14. A method for driving an image display device,

said method displaying tones by modulating a pulse width of a two-value voltage supplied to signal lines, wherein an amplitude of scanning lines is varied between positive application and negative application.

15. The method as set forth in claim 14, wherein a difference in amplitude of a voltage supplied to the scanning lines is equal to an amplitude of a voltage supplied to a common electrode.

16. A method for driving an image display device, said method displaying tones by modulating a pulse width of a two-value voltage supplied to signal lines, wherein a resistance of a transistor which switches ON or OFF signal application from the signal lines to pixels is increased with time from a beginning to an end of an application time of a single pixel.

17. The method as set forth in claim 16 wherein the resistance of the transistor is varied by varying a gate voltage.

18. A driving device of an image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements

which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said driving device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said driving device includes a signal line driving section for supplying a voltage, not less than a voltage supplied to the pixel electrodes, to the signal lines.

19. A driving device of an image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said driving device applying a voltage between a potential of the signal lines and a potential of the

common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said driving device includes a signal line driving section for supplying a signal, which is created by shifting a phase of a voltage waveform whose polarity is inverted per one horizontal period, according to tone data of the display image, with respect to a phase of a voltage waveform of the scanning lines, to the signal lines.

20. A driving device of an image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said driving device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said driving device includes a signal line

driving section for supplying a signal, which is created by shifting a phase of a voltage waveform whose polarity is inverted per one horizontal period, according to tone data of the display image, with respect to a phase of a voltage waveform of the common electrode, to the signal lines.

21. A driving device of an image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said driving device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said driving device includes a scanning line driving section for varying an amplitude of a voltage supplied to the scanning lines between positive application and negative application.



22. A driving device of an image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said driving device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said driving device includes a scanning line driving section for varying an amplitude of a voltage supplied to the scanning lines so that a resistance of a transistor for switching ON or OFF signal application from the signal lines to the pixels is increased with time from a beginning to an end of an application time of a single pixel.

23. An image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a

plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said image display device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said image display device includes a signal line driving section for supplying a voltage, not less than a voltage applied to the pixel electrodes, to the signal lines.

24. An image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said image display device applying a voltage between a potential of the signal lines and a potential

of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said image display device includes a signal line driving section for supplying a signal, which is created by shifting a phase of a voltage waveform whose polarity is inverted per one horizontal period, according to tone data of the display image, with respect to a phase of a voltage waveform of the scanning lines, to the signal lines.

25. An image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said image display device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal

lines,

wherein said image display device includes a signal line driving section for supplying a signal, which is created by shifting a phase of a voltage waveform whose polarity is inverted per one horizontal period, according to tone data of the display image, with respect to a phase of a voltage waveform of the common electrode, to the signal lines.

26. An image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said image display device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said image display device includes a scanning line driving section for varying an amplitude

of a voltage supplied to the scanning lines between positive application and negative application.

27. An image display device which includes a plurality of pixel electrodes which are formed on a substrate, pixel switching elements which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image to the pixel electrodes, and a common electrode for applying a common potential to pixels,

said image display device applying a voltage between a potential of the signal lines and a potential of the common electrode when a potential of scanning lines is ON, and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines,

wherein said image display device includes a scanning line driving section for varying an amplitude of a voltage supplied to the scanning lines so that a resistance of a transistor for switching ON or OFF signal application from the signal lines to the pixels is increased with time from a beginning to an end of an application time of a single pixel.

28. An activematrix-driven image display device including an image display panel for displaying an image by switching by a plurality of active elements, comprising:

a voltage varying circuit for varying a voltage of a signal for driving the active elements according to temperature change of the image display panel, so as to carry out temperature compensation of the active elements.

29. The image display device as set forth in claim 28, wherein said image display panel is a liquid crystal display panel.

30. The image display device as set forth in claim 28, comprising a temperature detector for detecting temperature change of the image display panel.

31. The image display device as set forth in claim 28, wherein said image display panel carries out tone display by phase modulation driving.

32. The image display device as set forth in claim 28, wherein an applied voltage of a scanning signal is varied according to temperature change of the image

display panel.

33. The image display device as set forth in claim 28, wherein an applied voltage of a common signal is varied according to temperature change of the image display panel.

34. The image display device as set forth in claim 28, wherein an applied voltage of a tone signal is varied according to temperature change of the image display panel.

35. The image display device as set forth in claim 28, further comprising:

a step-up circuit for stepping up a signal voltage for driving the active elements,

said signal voltage for driving the active elements being stepped up by the step-up circuit after being varied by the voltage varying circuit.

36. A driving device of an activematrix-driven image display device having an image display panel for displaying an image by switching by a plurality of active elements,

said driving device comprising:

a voltage varying circuit for varying a voltage of a signal for driving the active elements according to temperature change of the image display panel, so as to carry out temperature compensation of the active elements.

37. A driving method of an activematrix-driven image display device having an image display panel for displaying an image by switching by a plurality of active elements,

wherein a voltage of a signal for driving the active elements is varied according to temperature change of the image display panel, so as to carry out temperature compensation of the active elements.